

WHAT IS CLAIMED IS:

- 1     1.     A method of jetting liquid droplets, comprising the steps of:  
2             providing a liquid jetting head which includes: a plurality of nozzle  
3     orifices; a plurality of pressure generation chambers associated with the nozzle  
4     orifices; and a plurality of piezoelectric vibrators for respectively varying the  
5     volume of the associated pressure generation chamber to jet a liquid droplet  
6     from the associated nozzle orifice;  
7             providing ID data for identifying the respective nozzle orifices;  
8             providing correction data for correcting the amount of liquid jetted  
9     from the identified nozzle orifice;  
10            adjusting a displacement behavior of a piezoelectric vibrator  
11     associated with the identified nozzle orifice, based on the correction data.
- 1     2.     The liquid jetting method as set forth in claim 1, further comprising the  
2     steps of:  
3             providing a plurality of drive signals for driving the piezoelectric  
4     vibrators to jet liquid droplets from the nozzle orifices, the drive signals  
5     respectively having different liquid jetting energy from each other;  
6             selecting at least one drive signal within a single jetting cycle of the  
7     jetting head; and  
8             applying the selected drive signal to the piezoelectric vibrators.
- 1     3.     A method of jetting liquid droplets, comprising the steps of:  
2             providing a liquid jetting head which includes: a plurality of nozzle

3 orifices; a plurality of pressure generation chambers associated with the nozzle  
4 orifices; and a plurality of piezoelectric vibrators for respectively varying the  
5 volume of the associated pressure generation chamber to jet a liquid droplet  
6 from the associated nozzle orifice;

7 setting a single jetting cycle as a period in which N drive signals are  
8 applicable to the piezoelectric vibrators to jet liquid droplets from the nozzle  
9 orifices, N being an integer;

10 providing ID data for identifying the respective nozzle orifices;

11 providing correction data for correcting the amount of liquid jetted  
12 from the identified nozzle orifice;

13 selecting M drive signals from the N drive signals based on the  
14 correction data, M being an integer which is equal to or less than N; and

15 applying the M drive signals to the piezoelectric vibrators within the  
16 single jetting cycle.

1 4. The liquid jetting method as set forth in claim 3, wherein the selected  
2 drive signals are applied at different intervals within the single jetting cycle.

1 5. The liquid jetting method as set forth in claim 4, wherein the intervals  
2 are determined such that a phase of residual vibration of a meniscus of the  
3 liquid in the nozzle orifice due to jetting by a preceding drive signal.

1 6. A liquid jetting apparatus, comprising:

2 a liquid jetting head including: a plurality of nozzle orifices; a plurality  
3 of pressure generation chambers associated with the nozzle orifices; and a

4 plurality of piezoelectric vibrators for respectively varying the volume of the  
5 associated pressure generation chamber to jet a liquid droplet from the  
6 associated nozzle orifice;

7 a drive signal generator, for generating a plurality of drive signals,  
8 respectively driving the piezoelectric vibrators, within a single jetting cycle of  
9 the liquid jetting head;

10 an ID data storage, for storing ID data which identifies the respective  
11 nozzle orifices;

12 a correction data storage, for storing correction data which corrects  
13 the amount of liquid jetted from the identified nozzle orifice; and

14 a drive signal supplier, for selecting at least one drive signal from the  
15 plural drive signals to adjust a displacement behavior of a piezoelectric vibrator  
16 associated with the identified nozzle orifice, based on the correction data.

1 7. The liquid jetting apparatus as set forth in claim 6, wherein the drive  
2 signal supplier selects at least two drive signals from the plural drive signals.

1 8. A liquid jetting apparatus, comprising:

2 a liquid jetting head including: a plurality of nozzle orifices; a plurality  
3 of pressure generation chambers associated with the nozzle orifices; and a  
4 plurality of piezoelectric vibrators for respectively varying the volume of the  
5 associated pressure generation chamber to jet a liquid droplet from the  
6 associated nozzle orifice;

7 at least one drive signal generator, for generating N drive signals,  
8 respectively driving the piezoelectric vibrators, within a single jetting cycle of

9 the liquid jetting head, N being an integer which is not less than 3;  
10 an ID data storage, for storing ID data which identifies the respective  
11 nozzle orifices;  
12 a correction data storage, for storing correction data which corrects  
13 the amount of liquid jetted from the identified nozzle orifice; and  
14 a drive signal supplier, for identifying a nozzle orifice in which the  
15 jetting amount is to be corrected, through use of the ID data, and selecting M  
16 drive signals from the N drive signals to adjust a displacement behavior of a  
17 piezoelectric vibrator associated with the identified nozzle orifice, based on the  
18 correction data, M being an integer which is equal to or less than N.

1 9. The liquid jetting apparatus as set forth in claim 8, wherein the  
2 selected drive signals are applied at different intervals within the single jetting  
3 cycle.

1 10. The liquid jetting apparatus as set forth in claim 8, wherein the single  
2 jetting cycle is determined as a period which is enough to substantially damp  
3 residual vibration of a meniscus of the liquid in the nozzle orifice due to jetting  
4 by the last drive signal within the single jetting cycle.

1 11. The liquid jetting apparatus as set forth in claim 8, wherein a plurality  
2 of drive signal generators are provided such that different drive signals are  
3 generated from the respective drive signal generators.

1 12. The liquid jetting method as set forth in claim 2, wherein volume  
2 differences among the liquid droplets ejected by the respective drive signals  
3 can be divided by a volume of a liquid droplet which is the minimum volume  
4 jetted by one single drive signal.

1 13. The liquid jetting method as set forth in claim 1, further comprising the  
2 step of identifying a nozzle orifice in which the jetting amount is to be corrected,  
3 through use of the ID data.

1 14. The liquid jetting method as set forth in claim 3, further comprising the  
2 step of identifying a nozzle orifice in which the jetting amount is to be corrected,  
3 through use of the ID data.

1 15. The liquid jetting apparatus as set forth in claim 6, wherein the drive  
2 signal supplier identifies a nozzle orifice in which the jetting amount is to be  
3 corrected, through use of the ID data.